



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,081	01/05/2005	Yasushi Nakajima	040302-0426	9194

22428 7590 11/18/2009
FOLEY AND LARDNER LLP
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

HODGE, ROBERT W

ART UNIT	PAPER NUMBER
----------	--------------

1795

MAIL DATE	DELIVERY MODE
-----------	---------------

11/18/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,081	Applicant(s) NAKAJIMA ET AL.	
	Examiner ROBERT HODGE	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-5 and 7-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Amended claim 1 now recites the negative limitation stating that the holder member clamps the inner annular bulk member "without clamping the porous metal plate". No support can be found anywhere in the instant disclosure nor do applicants state where supposed support can be found for said negative limitation, therefore the amendment to claim 1 is new matter.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 7-15, 17-19 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,368,740 hereinafter Dristy.

Regarding claim 1, as seen in figure 2, Dristy teaches a cell plate provided with a supporting body including a porous metal plate (22 and 43), a cell including a solid electrolyte layer 8, a cathode layer and an anode layer (3 and 7), an inner annular bulk metal member (21 and 21') which is gas impermeable and is radially fixed to the porous metal plate, an electro conductive gas separator (23 and 45) and a holding member 24 clamping the inner annular bulk member without clamping the porous metal plate (see whole document).

Regarding claim 2, as seen in figure 2, Dristy teaches that the holding member 24 holds a part of the gas separator (22 and 45).

Regarding claim 3, Dristy teaches that the cells are stacked and are electrically connected (column 2, lines 51 et seq.).

Regarding claims 4 and 5, Dristy teaches the stack is held together by compression produced by a tie rod (column 4, lines 19 et seq.).

Regarding claim 7, as seen in figure 2, Dristy teaches an insulating member 8 provided on the metal member (21 and 21') having a same thermal expansion coefficient of the solid electrolyte.

Regarding claim 8, as seen in figure 2, Dristy teaches that the holder member 24 is provided with a gas supplying passage 25.

Regarding claims 9-12, as seen in figure 2, Dristy teaches open and closed gas passages at the outer periphery as well as providing two separate reactants to different sides of the holding member.

Regarding claim 13, as seen in figure 2, Dristy teaches a plurality of holding members that have electroconductivity and separated by an electrically insulative member and the cells are electrically connected.

Regarding claims 14 and 15 as seen in figure 2, Dristy teaches a holding member which is electrically insulative; with gas separators on both sides of the cell connected to each other and that all of the cells are electrically connected to form a stack.

Regarding claim 17, as seen in figure 2, Dristy teaches the mutual contacting areas of the holding member and separators are identical on both sides and therefore form mirror surfaces.

Regarding claim 18, Dristy teaches the layers are thin films (column 4, lines 19 et seq.).

Regarding claim 19, Dristy teaches the stack is held within a casing (column 2, lines 51 et seq.).

Regarding claim 21, Dristy teaches the shapes of the cell plate and holder member are circular or polygonal (column 4, line 19 – column 5, line 50).

Regarding claims 22-24, as seen in figure 2, Dristy teaches that the holding member is a distinct and different element from the cell plate and the electroconductive gas separator.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dristy in view of U.S. Patent No. 6,344,290 hereinafter Bossel.

Dristy does not teach that the holding member and the gas separators are made of the same material.

Regarding claim 16, as seen in figures 1 and 2, Bossel teaches a cell plate 1, provided with a supporting body 2 which is a porous metal plate, a cell including a solid electrolyte layer 17, a cathode layer 18 and an anode layer 19, an electro conductive gas separator 20 and a holding member 22 (see also column 4, line 33 – column 8, line 59). Bossel further teaches that the separators and the holding member are made of the same material (column 6, lines 52 et seq.).

At the time of the invention it would have been obvious to one having ordinary skill in the art to use the same materials for the holding member and the gas separator in Dristy as taught by Bossel in order to provide a cell assembly that enables simplified assembly with a smooth assembly interface. If a technique has been used to improve one device (using the same material for the holding member and the gas separator), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way (providing a cell assembly that enables simplified assembly with a smooth assembly interface), using the technique is obvious unless its actual

Art Unit: 1795

application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

The examiner notes that claim 16 is a product-by-process claim. "Product-by-process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps". See MPEP § 2113. Therefore because all of the structure recited in claim 16 is present in Dristy as modified by Bossel, claim 16 is included in the above 103(a) rejection.

Claims 1 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,645,626 hereinafter Edlund in view of Dristy.

As seen in figure 3a, Edlund teaches an electrochemical cell comprising a cell plate having a supporting body including a porous metal plate 32 and an inner annular bulk metal member 33 which is a gas impermeable member disposed to be radially adjacent to the porous metal plate in a hole provided at a central portion of the cell plate (column 5, lines 23-33, column 6, lines 65-67, column 7, lines 36-61 and column 11, lines 36-65).

Edlund does not teach that the holder member clamps the inner annular bulk member without clamping the porous metal plate.

Dristy as discussed above is incorporated herein.

At the time of the invention it would have been obvious to one having ordinary skill in the art to provide an electrochemical cell that does not clamp the porous metal plate in Edlund as taught by Dristy in order to prevent pinching and damage that can occur to the membrane. If a technique has been used to improve one device (to

Art Unit: 1795

providing an electrochemical cell that does not clamp the porous metal plate), and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way (to prevent pinching and damage that can occur to the membrane), using the technique is obvious unless its actual application is beyond his or her skill. See MPEP 2141 (III) Rationale C, KSR v. Teleflex (Supreme Court 2007).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT HODGE whose telephone number is (571)272-2097. The examiner can normally be reached on 8:00am - 4:30pm.

Art Unit: 1795

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571) 272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Hodge/
Primary Examiner, Art Unit 1795